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Contents

Soldiers Receiving Highest In High-tech To Keep Them Safe

By Kathy Roa
Special to the Voice

Common Remotely Operated Weapon Station, known as CROWS.

PICATINNY, N.J. -- Deployed U.S. military police units in Iraq are getting a new, high-tech armament system that is under development here that permits military personnel to remotely operate a weapon from the interior of an up-armored vehicle.

According to Lt. Col. Kevin P. Stoddard, product manager for Crew Served Weapons, the Army has approved sending the Common Remotely Operated Weapon Station, known as CROWS, to the war zone as an urgent requirement.

The system is mounted on a Humvee, Stoddard said. It enables gunners to remotely identify, assess and engage insurgents more safely and at greater distances.

Currently, MP units are operating first-generation CROWS that have “shoot-on-the-move” stabilized, targeting platforms, day- and night-time sensors and fire-control capabilities to gain vantage points in challenging terrains.

“Soldiers in these units are providing valuable feedback to the project office here,” he said.

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Common Remotely Operated Weapon Station (CROWS) with M-2 heavy barrel machine gun

“During a recent reconnaissance mission in Iraq, MPs using CROWS went out ahead of a convoy to gather intelligence and select a position,” Stoddard said, explaining that after assessing the route, the CROWS team chose a position from which they spotted a terrorist preparing to attack the convoy.

“The MPs used the system’s high-powered sensors to identify the insurgent and engage him with small-arms fire,” he said.

Stoddard’s office here continues to evaluate data received from Iraq and Aberdeen Proving Ground, Md. where a second generation of CROWS is being tested.

While the system has undergone testing on Humvees, Stoddard said CROWS can be mounted on a number of other platforms for use by military units with different missions.

CROWS was developed in conjunction with industry partner RECON Optical Inc., Barrington, Ill.

The system integrates the MK19 grenade machine gun, M-2 heavy barrel machine gun, M-240B medium machine gun and M-249 squad automatic weapon.

Near-term plans to incorporate the Army's advanced crew served weapons family including the XM307 and XM312 are underway.

The CROWS program is managed by the Army's Project Manager for Soldier Weapons here. Engineering support to the program is provided by Picatinny's Armament Research, Development and Engineering Center.

(Submitted by U.S. Army Armaments Research, Development and Engineering Center Public Affairs Office)

Common Remotely Operated Weapon Station (CROWS) display.

Two ECBC Products Win Prestigious Award Project Manager--Global Positioning System

Edgewood Chemical Biological Center

ECBC's BiSKit Biological Sampling Kit. BiSKit is one of two ECBC inventions to receive the 2005 Award for Excellence in Technology Transfer.

EDGEWOOD, Md.--Two products developed by the Edgewood Chemical Biological Center (ECBC) — the Biological Sampling Kit (BiSKit) and the Automated Decision-Aid System for Hazardous Incidents (ADASHI) — have been named winners of the prestigious 2005 Award for Excellence in Technology Transfer.

BiSKit is a portable, disposable device that will permit inspectors and forensic evidence specialists to collect biological contaminants from surfaces. The unit can be used to swab wet or dry surfaces. Testing has proven that it can effectively and safely collect bacteria, virus, and toxin material for later analysis and archiving. It will fill a vital role in the biodetection, nonproliferation and forensic analysis communities. The BiSKit was licensed to Quicksilver Analytics in Abingdon, Md., for manufacture for both military and private sector customers.

ADASHI is a computer-based tool that allows emergency management authorities to manage a hazardous incident or Weapons of Mass Destruction (WMD) event. Those functions include, but are not limited to: initial hazard assessment, hazard source analysis, mitigation alternatives, physical protection requirements, decontamination methods, hazard area prediction, detection planning and sampling, medical treatment, and triage criteria. Specific functional inputs are integrated with decision criteria, thus enhancing response management in a crisis situation. ADASHI is automatically monitoring the essential aspects of an event, whether it be a "what if" simulated event for training purposes, or a real event.

The award is sponsored by the Federal Laboratory Consortium for Technology Transfer. The ECBC inventors involved with both projects will be honored at the award ceremony, which will take place on May 4 in Orlando, Fla.

(Submitted by Edgewood Chemical Biological Center Public Affairs Office)

ECBC's ADASHI will help emergency management authorities to better coordinate activities.

Solider Survivability Highlighted at 24th Army Science Conference

By Ashley John
U.S. Army Tank-Automotive Research, Development and Engineering Center

WARREN, MICH. -- The U.S. Army Tank-Automotive Research, Development and Engineering Center, the nation's laboratory for advanced military technology, demonstrated various state-of-the-art technologies at the 24th Army Science Conference held in Orlando, Fla.

TARDEC, headquartered at the Detroit Arsenal in Warren, Mich., spearheads vehicle technology support to Soldiers and Operations Iraqi Freedom and Enduring Freedom.

In August 2003, enemy tactics in Iraq changed. The enemy began using more improvised explosive devices (IEDs) to injure and kill coalition troops. Responding to an operational need statement from Central Command, TARDEC and the Army Research Laboratory developed the HMMWV Armor Survivability Kit.

Highlighted at Army Science Conference, the ASK HMMWV is able to protect drivers and passengers of from small arms or explosive device fragments. The ASK is composed of add-on armor doors, rocker panels, back plate, ballistic windshield and door glass, and an add-on air conditioning unit. TARDEC developed, tested and fielded the ballistic glass window, which can be opened and used as a firing port, giving Soldiers increased protection and firing capabilities. To date, more than 9,400 kits have been fielded in Iraq and Afghanistan. These kits have proven to be enormously successful in saving lives and limiting injury to Soldiers and the program was recently awarded the 2004 Research and Development Laboratory Collaborative Team of the Year.

1st Sgt. Michael D. Brown of the First Calvary Division has been stationed in Iraq since March 2004. In August, Brown's HMMWV was outfitted with an ASK. During a mission about a month later, Brown's convoy was ambushed. After Brown's HMMWV took multiple hits, he stated the ASK saved his life. "The protection of the armored doors and the ballistic glass windows that all worked so hard to design, develop, and install is a great achievement that speaks volumes to the industry and the hard work you do contributing to our ongoing fight against terrorism."

To help defeat rocket-propelled-grenade threats, TARDEC survivability engineers have paired the ASK with TARDEC's Full Spectrum Active Protection Close in Layered Shield (FCLAS) Science and Technology Objective (STO)-- a developmental short range active protection system applicable to ground and tactical combat vehicles.

This near-term technology seeks to provide essential timing, tracking, accuracy, miss distance, and defeat capabilities, while enclosing technologies into a smoke tube launcher ultimately increasing combat effectiveness and enhanced crew protection.

A fully functional FCLAS system will consist of three components: the countermunition, launcher, and system controller. The countermunition searches for, tracks and intercepts incoming threats. The launcher is a flexible design and has the ability to be adapted to meet the needs of each platform that utilizes FCLAS. The system controller maintains central control over the FCLAS launchers and countemunitions. FCLAS can be easily integrated onto any vehicle platform—coupled with armor it will provide robust protection against the RPG.

Showcasing a rapid prototype response to PM-Stryker and PM-BCOTM, TARDEC also displayed the Stryker Battle Command on the move (BCOTM) vehicle. This pre-production prototype provides an upgraded Soldier friendly mobile command post that exemplifies that latest radios, computers and networking components.

Soldiers and Army leadership were extremely impressed to see that TARDEC took comfort into consideration while designing the interior layout of the Stryker. For ease of egress, the center isle was left as wide as possible, and was flanked by four comfortably

padded, commercial-of-the-shelf (COTS) bucket seats that are arranged in a 2x2 configuration. The COTS seats are mounted on stainless steal wire shocks and are upholstered with fireproof cloth allowing for maximum safety and comfort.

Additionally, the shock mounts provide relief from rough terrain and also provide the Soldier with improved protection if the vehicle is hit by a mine or an IED. Currently, PM-Stryker is evaluating TARDEC's Stryker BCOTM design for future production and for Air Force Forward Air Controller vehicle options.

TARDEC also demonstrated the Omni-Directional Inspection System (ODIS) robot, which is keeping Soldiers deployed in Iraq and Afghanistan out of harms way. ODIS is a remote-controllable (tele-operated) robotic vehicle inspection system. ODIS provides Soldiers with a clear view of the underside of a vehicle, but more importantly, OIDS provides standoff inspection capability.

Currently, ODIS is making its rounds in the United States and abroad. In mid-August, an ODIS was loaned to the Capitol Police Bomb Squad Hazardous Materials Unit in Washington, D.C. to perform reconnaissance on vehicles and other suspicious devices. Concurrently, ODIS is being operated by the Center of International Trade in Long Beach, Calif., where approximately 30 percent of all U.S. imports travel through. A series of evaluations are planned with port authorities, the Marine Corps and the U.S. Army Stryker Brigades currently deployed to see how ODIS will improve security at military and commercial marine cargo facilities.

Another innovative robotic solution to keep Soldiers safe is providing explosive ordnance disposal units with the ability to mount and use a Percussion Actuated Non-electric (PAN) disrupter from a TALON robot—giving a standoff capability during IED diffusion. A result of a TARDEC SBIR agreement with Foster Miller, more than 20 PAN mounting brackets have been shipped to Iraq and are being distributed to Army and Marine Corps EOD units as they bring their robots in for maintenance. TARDEC, through in-country liaison officers, is monitoring the distribution and gathering user feedback for future program development.

While providing timely and state-of-the-art survivability programs, TARDEC continuous to focus its technological initiatives on the current and unit of action vehicle development.

Huntsville Center Promotes Missile Recycling Technologies

U.S. Army Aviation and Missile Research, Development and Engineering Center

Dr. William S. Melvin, an Army civilian scientist at the AMRDEC Propulsion and Structures Directorate, Redstone Arsenal, Ala., briefs Gen. Benjamin Griffin, the new commanding general of the U.S. Army Materiel Command, about the capabilities and successes of the Missile Recycling Center at Anniston Army Depot, Ala.

REDSTONE ARSENAL, Ala.--A missile recycling program pioneered by researchers and scientists at the Aviation and Missile Research, Development, and Engineering Center at Redstone Arsenal, Ala., is proving itself at an operational facility 100 miles to the south at Anniston Army Depot.

The Missile Recycling Center, managed and operated by the Anniston Defense Munitions Center, is expected to be able to process 15,000 Tube-launched, Optically-tracked, Wire-guided missiles each year.

The transition of AMRDEC missile recycling technology to a production capability at the ADMC was facilitated by Lt. Col. Mark B. Pomeroy, ADMC commander, Gordon L. “Doc” Williamson, ADMC civilian executive assistant, Dr. William S. Melvin, AMRDEC, and Dr. Earl Hughes, Amtec Corporation.

“The MRC program supports the new Army environmental strategy based on sustainability,” said Melvin. “Missile recycling has proved itself to be an innovative and cost effective method for achieving Army environmental and sustainability goals by balancing mission requirements, community needs, and natural resource protection.”

Melvin is an Army civilian scientist at the AMRDEC Propulsion and Structures Directorate at Redstone Arsenal. He is the AMRDEC technical program manager for missile recycling and is credited with the development of the missile recycling technologies installed at the ADMC.

He is often called on to brief visitors to the MRC. One recent visitor Melvin briefed was Gen. Benjamin S. Griffin, the new commanding general of the U.S. Army Materiel Command. Other visitors have included Brig. Gen. James W. Rafferty, commanding general of the Joint Munitions Command (JMC), and Maj. Gen. John M. Urias, program executive officer, Air, Space and Missile Defense, who was interested in possible MRC program applications recycling the Stinger and Patriot missile systems.

Officials say the MRC is an outstanding example of AMRDEC technology that has transitioned to full-scale production.

A 34,000-square-foot building, that had been vacant for several years, was renovated to support Phase 1 of the missile recycling operations. The building contains 16 bays suitable for conducting explosive operations.

Recycling operations began in mid-Fiscal Year 2003 under a Low Rate Initial Production (LRIP) effort.

“The MRC effort has helped to sustain an organic work force at the ADMC and increase the utilization of its existing facilities and resources,” said Melvin.

“Currently, the facility is capable of recycling the TOW missiles. Approximately 98 percent of its components are recyclable into commercial and military reuse products,” he said.

The center processed 5,085 TOW missiles during the FY03 LRIP effort. During FY04, 9,640 TOW missiles were processed under a limited production effort. Typically, 15 government and Amtec contract employees were required to perform the myriad missile disassembly and reclamation processes.

Melvin points out that MRC technology is currently being developed for the Multiple Launch Rocket System (MLRS) and related ammonium perchlorate (AP) based missile systems. Production scale equipment is being designed and fabricated to accommodate the larger MLRS size requirements.

More than 600,000 TOW missiles were manufactured beginning in the 1970s, and the oldest versions have exceeded their shelf life. The missiles scheduled for demilitarization have either been kept in storage or have been returned from overseas locations.

Before MRC operations, obsolete missiles were buried and detonated underground. Called Open Burning/Open Detonation (OB/OD), the old process left the Army with subsequent remediation responsibilities.

Now, Melvin points out, “Missile warhead and rocket motor components, launch tubes, guidance and control components, airframe components and shipping containers are recovered for reuse or recycling.

“For example, missile launch tubes are currently being reused in new missile production. During FY04, Raytheon, Inc. accepted delivery of 2,325 missile launch tubes. I expect an additional 5,000 tubes will be available annually. In addition, negotiations are currently under way for the possible reuse of 36 individual parts in new missile production.”

Program managers suggest recycling of TOW missile components from the MRC is providing significant cost savings and environmental stewardship benefits for the Army. They say the MRC provides a cost-effective source for TOW missile parts that are not currently available. It also provides a source of revenue to the government that helps to offset MRC operation costs.

Missile recycling is a pollution prevention process and supports Army environmental objectives. The ADMC MRC received an Honorable Mention Award for the FY01 Secretary of the Army Environmental Award for Environmental Excellence in Weapon System Acquisition, the Alabama Department of Environmental Management (ADEM) 2003 Pollution Prevention Award, and a First Place Army Environmental Center (AEC) Award for Pollution Prevention in FY03.

The missile disassembly process is performed at several work stations. After removal from its shipping container, the missile is extracted from the launch tube, the wires are disconnected, and the launch motor is removed. In subsequent disassembly operations, the crush switch and probe are removed from the warhead. The warhead is then removed from the missile and the copper wires are separated. Next, the flight motor is removed from the missile. After missile disassembly, the aluminum cartridge screws, actuator, gyroscopes and electronics are all that remain. A visual and physical inspection is performed on each launch tube. An automated system verifies that the electrical wires and connectors of the launch tube are functional for reuse purposes. The warhead and rocket motor sections are transported to their appropriate disassembly stations.

Flight and launch motor nozzle removal, propellant removal, warhead explosive removal, and energetics size reduction are performed by remotely operated machines. The rocket motor propellants and igniters are removed from their metal cases using computer-controlled operations. Cartridge-loaded propellant grains are used as feedstock material for the Slurry Explosive Module (SEM).

Case-bonded propellants are mechanically machined and removed from their metal casing. The size-reduced propellant is used as feedstock for the Energetic Processing Module (EPM). The warhead explosive is removed using a billet press-out machine. The warhead billet is subsequently separated from its copper liner and size reduced using the warhead billet splitting machine. Explosive materials and components are routinely handled by operators at many of the MRC work stations, and static electricity is a concern. Rubber mats are used to reduce static electrical charge, and processing operations are locked down during thunderstorms. Visitors may remotely observe the various energetic separation and removal processes on a computer monitor. After processing, the employees remove the rocket motor and warhead subcomponents from the machines and prepare for repeat operations.

Under the on-going Phase 2 MRC production efforts at the ADMC, construction of the production-scale Energetics Processing Module (EPM) and the Slurry Explosive Module (SEM) will be completed later this year. The function of the EPM is to recover high value, energetic oxidizer ingredients, such as HMX, RDX, and AP, from size-reduced propellant and warhead feedstocks. The energetic materials are recovered, by extraction, using liquid ammonia processing solvent within a closed-loop system. No pollutants are released into the environment. The recovered energetic ingredients are used to support new munitions production and commercial reuse

applications. The function of the SEM is to convert low-value energetic feedstock materials into commercial mining explosives. These feedstock materials are derived from low-value propellant grains, rocket motor igniters, and over-aged gun propellants that otherwise would be disposed by the OB/OD process.

The function of the Hardware Decontamination Module (HDM) is to remove trace amounts of energetic material from aluminum, copper and steel missile hardware components. These hardware components include items such as rocket motor cases, warhead cases, igniter hardware, nozzles and related items that have been exposed to energetic materials.

The metals are decontaminated, by thermal flashing, to ensure there is no significant amount of explosives that may pose a safety hazard. The HDM is limited to five pounds of net explosive weight (NEW) per batch. Several hundred pounds of metals that contain trace amounts of explosive materials can be decontaminated in a single batch.

The missile recycling program is only used for high explosive weapons. The MRC is not associated with the chemical weapons demilitarization program also taking place at ANAD. Since August 2003, the Army has been safely destroying chemical weapons stored at ANAD in the Anniston Chemical Agent Disposal Facility which uses high temperature furnaces to destroy the chemical agent, explosives, and to decontaminate metal parts. (More information about that program is available at: www.cma.army.milT)

(Please note: This report is based on an article from the Space and Missile Defense Command's The Eagle by Patricia Vail, a contract specialist in the SMDC Contracting and Acquisition Management Office, Huntsville, Ala.)

(Submitted by U.S. Army Aviation and Missile Research, Development and Engineering Center Public Affairs Office)

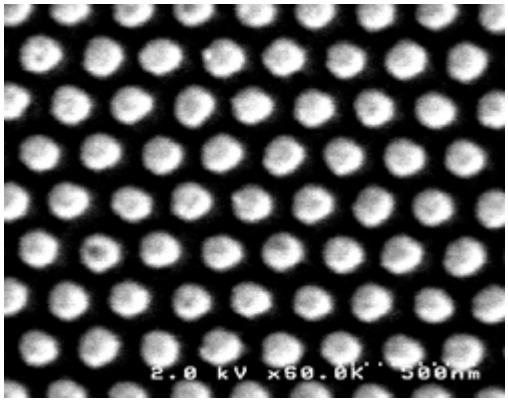
Good Things May Be Coming In Very Small Packages

By Dave Davison
U.S. Army Research Laboratory Public Affairs Office

ADELPHI, Md.--Someday, thanks to nanotechnology, soldiers may have many of the warfighting aids and protections they need built into the fibers of their uniforms.

Although not likely to be fielded anytime soon, the Army Research Laboratory is laying the groundwork by building an in-house research capability as well as working with universities and other outside labs and organizations in various areas of this relatively new and currently hot technology.

A nanometer is one-billionth of a meter, so small a million of them will reach across the head of a pin, but the technology developing around it, when mature, is predicted to have a huge impact on all areas of industry and society. Working on the nanoscale level, scientists and engineers may someday be able to build things by placing every atom and molecule in a desired place. This could mean products that are better built, cleaner, safer and smarter. Another area of potential for nanotechnology is that at the nanoscale, different physical laws apply, which enables a number of new applications in optics, electronics, magnetic storage, computing and other areas.

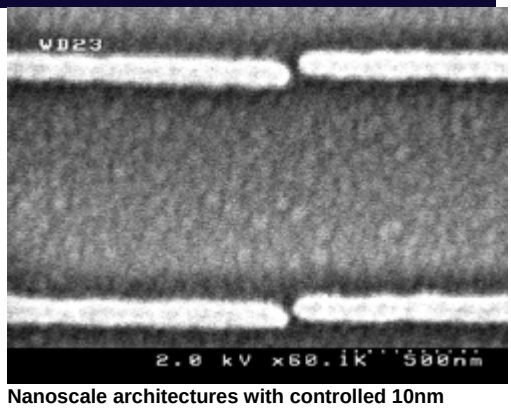


Controlled two dimensional array of150nm gold dots for chem/bio detection using Surface-enhanced Raman Scattering.

“Nanotechnology lends itself to many applications,” explained Dr. Paul Amirtharaj, acting chief of the Macro-Devices Branch at ARL’s Sensors and Electron Devices Directorate. “Currently, a critical area of research is in biological and chemical agent detection,” he added.

Dr. Alma Wickenden, a research materials engineer, pointed out that ARL and the Natick Soldier Center, are working to incorporate new types of conductive and semiconducting nanofibers into nano- and micro-scale sensors for electronic detection of chemical and biological agents.

“The intention is that these sensors could be woven into a uniform that serves as a sensor platform. If the sensors detect a chemical or biological agent, the conductive fibers help transmit that information to an outside station so the information can be passed on,” she explained. This type of sensor could also be used with unmanned flying vehicles to explore chemical clouds for toxic substances, she added.



Nanoscale architectures with controlled 10nm gaps, developed for integration of molecular switches.

Other nanotechnology-enabled sensor concepts are also being developed at ARL, she said, including one in which nanoscale gold particles have been placed in precise arrays, and have resulted in over 1,000 times enhancement of the typical signals detected from chemical species. This sensor technology could be fielded in five to 10 years, Dr. Wickenden said. Further down the road, however, ARL is looking at the possibilities offered by carbon nanotubes.

Carbon nanotubes are nanoscale structures which have unusually high mechanical strength, electronic mobility and thermal transport characteristics. They may be useful for a number of things such as cooling operating circuits thereby increasing their efficiency while cutting operation costs to possibly being used in high density information processors. Dr. Richard Smalley, a Nobel Prize winner, is currently working with carbon nanotubes as a guest researcher at ARL.

Both Amirtharaj and Wickenden point out that long and careful research is necessary before progress is claimed. “Many times what works in the lab (due to the controlled conditions), doesn’t work in the field,” Amirtharaj said.

However, both are enthusiastic about the potential of nanotechnology.

“There’s a lot going on in nanotechnology.” Amirtharaj said. He added that other areas ARL is investigating include materials, power sources such as batteries, and computer modeling among others.

“We pay close attention to what is going on in industry plus we do some of our own basic research. Nanotechnology is a new approach and exciting in so many different areas,” he said.

ECBC Develops First-Of-Its-Kind Device To Calibrate Chemical Agent Detectors

Edgewood Chemical Biological Center

EDGEWOOD, Md.—The Edgewood Chemical Biological Center (ECBC) has developed LenGen – a solid-state device that can be used to calibrate chemical agent detectors.

ECBC has created LenGen — a portable, solid-state device to calibrate chemical agent detectors.

Until now, chemical agent detectors in places like subways, ports and other sensitive areas had to be removed and taken to a laboratory for calibration, creating a time- and labor-intensive process and requiring that the detector be taken out of service. The LenGen unit has the potential to solve these problems: it can be taken directly to where detectors are located, and the calibration can be done on site.

In order to validate the performance of a chemical agent detector, a known quantity of chemical agent vapor must be produced and presented to the detector. Based on the detector's readings, technicians can determine how accurately the device is functioning.

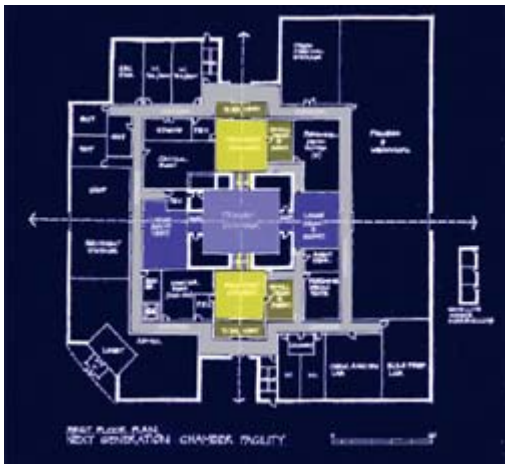
In the past, the challenge has been twofold. First, the equipment necessary to safely generate a controlled amount of chemical agent vapor was not found outside of highly specialized laboratories. Second, most equipment used for this purpose requires a liquid solution to carry the chemical agent, which taints the sample and leads to questionable results from the detector.

The Len-Gen, as a transportable solid-state vapor generator, eliminates both of these issues and has great potential for any situation in which detectors are stationed in the field. As part of its ongoing efforts to achieve maximum benefit from its innovations, ECBC is working to transition this patented technology (Patent # 6,722,182 B1) to the private sector.

(Submitted by Edgewood Chemical Biological Center Public Affairs Office)

ECBC Set To Build Sample Receipt Facility (SRF)

Edgewood Chemical Biological Center



A diagram of ECBC's new Sample Receipt Facility.

EDGEWOOD, Md.--For years, the Edgewood Chemical Biological Center has played a critical role for the international community in receiving and analyzing weapons where the contents are not known.

Currently, ECBC's facilities are not adequate for handling the increased volume of samples or the potential configuration of weapons that modern-day warfare produces. ECBC will construct a new Chemical Biological Radiological Sample Receipt Facility (CBR-SRF) sooner than expected as Congress recognized the urgent national need for this facility and moved the funding forward into the FY05 budget.

The CBR-SRF will be the location that samples of materials to be tested or analyzed (such as ones unearthed in Iraq) go first to be documented and triaged. This triage process can also include characterizing samples, determining contents of unknown samples, removing of explosive configurations, and documenting a legal chain of evidence for the sample.

The new facility will expand our current capabilities to include:

- Remote intrusive sample processing of explosive munitions.
- Containment capability for biologicals/toxins.
- Containment capability for explosively configured agent devices.
- High throughput sample bar coding and preprocessing including a solid chain of custody system.
- Agent neutralization and detoxification.

The facility will allow disassembly and evidentiary exploitation of improvised terrorist devices and munitions, including explosively configured munitions. The CBR-SRF is not a lab; rather, it is a facility that assesses and characterizes unknown devices prior to being analyzed in a lab or handled further. This work is currently being carried out in several locations at ECBC. Ground is expected to be broken by late summer of 2005.

TARDEC Partners With Canada During the Coalition Interoperability Demonstration

By Ashley John
U.S. Army Tank-Automotive Research, Development and Engineering Center

During the 24th Army Science Conference, RDECOM, TARDEC and Defence Research and Development Canada jointly displayed crew-station technology that will enhance operability and communication for both armies.

WARREN, Mich.-- The U.S. Army Tank-Automotive Research, Development and Engineering Center (TARDEC) and Defence Research and Development Canada (DRDC), demonstrated a technical collaboration involving the Canadian Multi-Mission Effects Vehicle (MMEV) and the American Crew Integration and Automation Test-bed (CAT) during the 24th Army Science Conference in Orlando, Fla.

Army transformation is moving both the American and Canadian armies toward a knowledge-based, medium-weight force designed to prevail on the battlefield by replacing sheer mass with leading edge situational awareness, speed and combat power.

In the first of the three experiments in February 2004, several two-man crew stations were linked together, with Canadian and American vehicle crews operating their own and each other's equipment in a future combat situation. The U.S. and Canadian armies are "engaged in transformation that focuses on finding new ways to use equipment, "said David Saint, project director for the MMEV of DRDC.

TARDEC is leading the U.S. Army's unit of action vehicle electronics integration efforts with its Vehicle Electronic Technology Integration Program. Composed of the CAT and the Robotic Follower Advanced Technology Demonstrations, it addresses the need for unit of action vehicles to assimilate and distribute more information to, from and within.

Engineers are testing an advanced two-man crew station that supplies Soldiers will full situational awareness while allowing them to control unmanned recognitions, indirect vision driving, autopilot, robotic follower path generation, drive by wire, position navigation and embedded simulation.

DRDC's MMEV Technology Demonstration Project (TDP) demonstrates and evaluates a future vehicle concept that features a single crew capable of using direct fire, beyond-line-of-sight and air defense weapons concurrently. The MMEV will result in a virtual vehicle that simulates a family of advanced technologies with futuristic performance characteristics, enabling the evolution of: command and control, technology performance, multi-mission capability, human performance and interoperability with U.S. forces.

"When we realized we were both assessing future technologies, we thought, 'Why not do a comparison of how concepts are being developed,'" said Paul Bounker, a senior distributed simulation engineer at TARDEC. Bounker also added that, "Battlefield operations will require interaction and cooperation with coalition forces." In those situations, troops will most likely not use each other's equipment, but "each Army has a different role, as well as its own strengths and weaknesses," he said. This experiment gives Soldiers on both sides first-hand knowledge as to "how they can best fit together."

As demonstrated at Army Science Conference, the results of these experiments will be relevant to Army transformation objectives in the United States and Canada. The information gathered will advance efforts to improve Army interoperability and assess the merits of future American and Canadian technologies in a cooperative fashion, to maximize the research and development investments of both countries.

CERDEC Bridging The Gap Between Engineers, Scientists And The Warfighter

By Daphne Hart
Communications-Electronics Research, Development and Engineering Center

FORT MONMOUTH, N.J.--The slogan of the U.S. Army Research, Development and Engineering Command may be "Technology to the Warfighter Quicker," but how do RDECOM's engineers know that the technology they're developing is what the warfighter wants?

The Communications-Electronics Research, Development and Engineering Center's (CERDEC) Human Resources Office has implemented a new program to answer that question.

Human Resources Program Specialists Dwayne Davis and Addie Rogers created the Soldier Engineer Interface Initiative (SEI2) to expose junior engineers and scientists (E&S), formerly known as interns, to a different side of the Army… the Soldier side of the Army.

"We wanted to give the engineers and scientists a chance to take theoretical work and see it in the real world," Rogers said. "Many times that comes with experience, but the SEI2 program can help facilitate this process."

CERDEC computer engineer Jean Choi tries out cutting-edge technology in a Command, Control, Communications, Computers, Intelligence, Surveillance and Reconnaissance On-The-Move Testbed vehicle as part of the Soldier Engineer Interface Initiative.

To accomplish that, Davis and Rogers knew that they had to take recent hires out of the lab and into the field.

A conversation with Doug Wong, deputy for the Command, Control, Communications, Computers, Intelligence, Surveillance and Reconnaissance (C4ISR) On-The-Move Testbed Special Projects Office, led Davis and Rogers to partner with one of the CERDEC's most prominent projects.

In November, a group of seven junior engineers and scientists attended live C4ISR On-The-Move testing at Fort Benning, Ga., where they toured facilities, spoke to Soldiers and senior engineers, and gained hands-on experience with cutting-edge technologies in a field environment. In fact, a couple of engineers observed some of their projects being used in the test bed.

CERDEC engineers, both junior and senior, as well as members of the Human Resources Office pose for a photo on a training range during their visit to Fort Benning, Ga.

"I think that experiences like this definitely give me a better perspective on what I'm doing back in the office," said Mike Vincelli, a junior computer science specialist in the Command and Control Directorate who participated in the Benning visit. "In addition to being something that I enjoyed, it was also very educational."

But the test-bed visit was not the capstone of the SEI2, instead it was a pilot event that kicked off the new program in grand style.

CERDEC computer scientist specialist Mike Vincelli examines a weapon as part of the Soldier Engineer Interface Initiative, a program helping to bridge the gap between Soldiers and engineers

"We'll also be looking for opportunities to participate with weapons ranges, signal exercises, maybe a trip to West Point," Davis said. "Our next trip will probably be to Fort Hood, Fort Campbell or Fort Drum to see the joint network node, a new communications architecture that provides commanders with voice, data and video capabilities in tactical environments."

The SEI2 concept is actually an extension of the greening course that the CERDEC has conducted for the past 18 months. In fact, that course was so well received that it is now mandatory for all new hires.

"The difference between the two is that the Soldier interface program is a more tangible experience," Rogers said. "We want to give the junior E&Ss the opportunity to interact with the Soldier in the field as opposed to a laboratory setting."

In addition to making CERDEC's engineers and scientists more efficient at providing equipment to meet the Soldier's mission, the greening course and SEI2 program also lets Soldiers know that their equipment is being built by someone who genuinely understands their needs.

"Putting a face on who builds their equipment is very important to these Soldiers," said Davis, a former master sergeant, "As a former Soldier, I had no idea who designed or fabricated the equipment I worked with and I would have liked to have had that."

Davis said he hopes the program will affect the entire workforce, not just those who go through the program. "I think it presents the concept of the Army as one team, because we are one team," he said. "What we do here has so much impact"

Vincelli seconded that statement.

"It provided me with a more focused and meaningful outlook on how the theory and technology that we develop here at Fort Monmouth is really making a difference in terms of how Soldiers train and go about their missions," Vincelli said.

The experience provided by the SEI2, like the technology developed by the CERDEC, is ultimately designed to support the Soldier.

"They're our customer," Rogers said. "They're why we're here."

ARL Employees Spread Holiday Cheer

By Tonya Johnson
U.S. Army Research Laboratory Public Affairs Office

ARL employees spread the true meaning of the holiday season by collecting items and money for the injured Soldiers at Walter Reed Army Medical Center. From left to right: ARL's Sgt. Maj. Enoch Godbolt, Sgt. Rona Stanley, Tina Shaner, Carrie Kendrick, Janey Louden, Nelous Mallory, Arthur Jackson, and Ernest Reid.

ADELPHI, Md.--Employees at the U.S. Army Research Laboratory spread the true meaning of the holiday season by collecting items for injured Soldiers at the Walter Reed Army Medical Center in Washington, D.C.

Many of the wounded soldiers at the hospital are confined to their beds or must use wheelchairs or other devices to assist them in moving around. The Soldiers' conditions at the hospital range from stable to critical condition and some Soldiers have undergone numerous surgeries and spent months at the hospital recuperating.

To help comfort the Soldiers who could not go home for the holidays, Carrie Kendrick, associate director for laboratory operations, and her husband, Col. Robert Kendrick, decided to visit them and also collect items and monetary donations to take to Walter Reed on Dec. 23.

"It was a great experience because you know that what you did was needed and appreciated," said Kendrick. "This experience reminded me when I was deployed in the first Persian Gulf War, and we received presents from our fellow Americans. Those presents, like the ones we delivered at Walter Reed, made a difference and lifted our spirits."

Tina Shaner, an administrative support assistant in the Public Affairs Office, and Janey Louden, Kendrick's secretary, organized the project, which ran from Dec. 13-23. Shaner and Louden advertised the project by sending out a special dispatch e-mail message to the ARL workforce.

"I realized during this project how compassionate people are at ARL," said Shaner. "My phone was constantly ringing with people who wanted to donate. This was a good experience because it was fulfilling and heart touching. It made me feel good knowing I was doing something for the injured Soldier who got hurt fighting for me, my family, and my country."

"We at ARL haven't forgotten what they (injured Soldiers) have done for us," added Louden. "We're giving back what we can. These Soldiers have sacrificed a lot and it's important to help them. I just hope everyone will remember to help our Soldiers throughout the year and not just during the holiday season."

Collection boxes were placed at the Adelphi Laboratory Center in Adelphi, Md., and at Aberdeen Proving Ground, Md. Both sites collected a variety of items including 24 prepaid telephone cards, 16 books of postage stamps, and three boxes of books and magazines. Approximately $1,400 was collected in cash, checks, and money orders. Some employees also wrote letters and cards thanking the Soldiers for their sacrifices and for serving their country.

Kendrick said all Americans should appreciate these Soldier's sacrifices.

"You can't put a price on their sacrifice," she said. "When you think of these Soldiers, think of the might of the United States of America. We're fortunate to have Soldiers who gave all for us. We'll never match what they have done for us. These Soldiers, most who are 18 to 21 years old, have families and they are someone's daughter or son, brother or sister, or niece or nephew."

RDECOM Showcases Technology to Gen. Griffin

EDGEWOOD, Md.—The U.S. Army Research, Development and Engineering Command showcased cutting-edge technology, Dec. 22, to Gen. Benjamin Griffin during his first visit to Aberdeen Proving Ground, Md. after assuming command of the U.S. Army Materiel Command.

During his visit, Gen. Griffin toured both the Rodman Materials Research Laboratory, which is part of the U.S. Army Research Laboratory, and the Edgewood Chemical Biological Center's biotechnology facility.

Additionally, he was presented information on the latest in robotics, survivability, high performance computing and scientific visualization, advance design and manufacturing and mobile laboratories.

(Submitted by U.S. Army Research, Development and Engineering Command Public Affairs Office)

Gen. Benjamin Griffin discusses advances in technology with John Miller, director of the Army Research Laboratory (left), Brig. Gen. Roger Nadeau, commanding general of RDECOM, and Dr. Steven McKnight (right) during a visit to the Rodman Materials Research Laboratory, Dec. 22.

ARL Celebrates Contributions of Dr. King

By Tonya Johnson
U.S. Army Research Laboratory Public Affairs Office

ADELPHI, Md.--During the third Monday of January each year, people around the world reflect on the life and vision of the Rev. Dr. Martin Luther King, Jr. King was a man noted for his nonviolent approach to helping people of all races achieve equal rights and justice.

Employees at the U.S. Army Research Laboratory had the opportunity to listen to Kevin McIlvaine, a Washington, D.C. based entertainer, singer, historian, model, actor, and ordained minister, speak Jan. 11 about King and how he helped change America for the better.

“He was a master of hope, peace, and love,” said McIlvaine. “He believed in nonviolence and Ghandi (a non-violent Indian political and spiritual leader) was one of his role models. Dr. King was many things to many people. Some thought of him as a civil rights leader and a great orator while others thought of him as an agitator and trouble maker.”

Many people may not realize it, but King never finished high school. Instead, he opted to go to college early, and he graduated at 19 from Morehouse College in Atlanta, Ga. in 1948. After that, he attended Crozer Theological Seminary in Chester, Pa., and received his theological degree.

King made his first notable mark in history when he helped mobilize the 382-day bus boycott in Montgomery, Ala., when Rosa Parks, a middle age African-American woman, was arrested for not giving up her seat on a public bus.

“This was the beginning of the modern Civil Rights movement,” said McIlvaine. “Dr. King felt that people should stand with determination about their convictions because each of us has the opportunity to make America a better nation.”

King was a leader who was not afraid of opposition. He spoke out against a variety of issues ranging from Jim Crow laws, equal voting rights for minorities, unfair hiring practices, and the Vietnam War. He was arrested numerous times, and he and his family received countless death threats, but he continued to speak and act upon what he believed in. He received many honors, including being named Time magazine’s “Person of the Year” in 1963 and winning the Nobel Peace Prize in 1964.

Carrie Kendrick, associate director for laboratory operations, was 13 living in rural Tennessee when King was killed Apr. 4, 1968 at the Lorraine Hotel in Memphis, and she remembers that day vividly. Kendrick remembers attending elementary school in a three-room school house where she was taught survival skills on how to live in a segregated society. She also remembers when public bathrooms, water fountains, and stores were segregated by race.

“When he was killed, I thought at that point our glimmer of hope was shattered,” said Kendrick. “Dr. King was a man for all people. Dr. King’s work improved the quality of life for all people. He was a visionary and a strategic thinker being led by God. I am convinced that the 13-year-old in Tennessee wouldn’t be standing here today if not for the plight and fight of Dr. King.”

McIlvaine urged the audience to continue to share King’s life with their children and grandchildren.

“Many of our young people today have fallen by the way side,” he said. “We need to share with them how Dr. King played an important part in making America the great place it is today. We’ve got to tell young people what he was about. He was more than a dreamer; he was a visionary. You should never forget where you come from or else you won’t know where you’re going. I want to keep his vision alive.”

AMC Elements Included In Initial NSPS Conversion

Three organizational elements within the Army Materiel Command will be included in the first wave of conversion to the National Security Personnel System.

Employees at the Communications-Electronics Command in Fort Monmouth, N.J., the Armament Research, Development and Engineering Center in Picatinny Arsenal, N.J., and all continental U.S. sites of the Tank-automotive and Armaments Command will take part in the initial implementation of the human resources and appeals elements of the personnel system beginning as early as July 2005. Remaining AMC activities will be incorporated in later phases.

This initial conversion will only include General Schedule and Acquisition Demonstration employees. The remainder of the eligible workforce will be initiated following an assessment of the first conversion and after the secretary of defense certifies the Department of Defense's performance management system.

According to officials at the Office of Personnel Management, NSPS is expected to improve the way civilians are hired and assigned, as well as the way they are compensated and rewarded. For more information about the new personnel system, visit the NSPS Web site at www.cpms.osd.mil/nsps .

(Submitted by U.S. Army Materiel Command Public Affairs Office)

Army Helicopters Borrow NASCAR Windshield Technology

A laminate that protects NASCAR racecar windshields from rocks and debris will soon give extra protection to Army helicopters flying in Iraq and Afghanistan.

The Aviation Applied Technology Directorate at Fort Eustis, Va., started testing the concept in March and just received the green light to begin applying the Mylar polyester coating to the windshields of operational aircraft.

Nathan Bordick, an engineer working on the project, said the Army borrowed the idea from NASCAR, where teams have been applying multiple layers of the peelable coatings to vehicle windshields for years to resist cracking, chipping and scratching. Periodically throughout a race, pit crews peel away a layer, leaving a clear, undamaged windshield for the laps ahead, he said.

Field tests on Black Hawk and Chinook helicopters showed that the coatings, which cost about $100 to apply, could significantly extend the life of aircraft windshields, which run $3,000 to $5,000 apiece, Bordick said.

First priority for the new coatings will go to helicopters flying in Iraq and Afghanistan, where sand and harsh desert conditions quickly batter windshields and render them unsafe. However, Bordick said, the Army would eventually like to add the coatings to all its aircraft windshields.

(Information from the American Forces Press Service)

Beware of Scams, Schemes and Frauds

Did you know that scams, schemes and fraud together form a $40 billion-a-year enterprise and last year, in the United States alone, there were more than five million victims with a combined loss of assets of over $1 billion?

Also, did you know that the majority of scams, schemes and fraud originate beyond our borders, in countries like Spain, Canada, Costa Rica, the United Kingdom, Japan, China, Korea, India and the Philippines? The monies these countries received are used for illegal drug trafficking and financing terrorist's organizations.

How can we protect ourselves from being victims? The answer is by simply applying common sense. A great adage to remember to avoid becoming a victim is, "If it seems too good to be true, it probably is." Below are a few important guidelines to remember:

- Know who you are dealing with. Verify. Check with your state or local consumer protection agencies and the Better Business Bureau. Get the company's physical address and phone number in case there is a problem later.
- Don't believe promises of easy money. If someone claims that you can earn money with little or no work; get a loan or credit card even though you have bad credit; make money on an investment with little or no risk. It could possibly be a scam.
- Don't believe the promise of large sums of money; do not wire money to a stranger.
- Cell phones. Be aware of who is behind you in line. Someone can take a picture or write and copy your card number and pin number for future use.
- Understand the offer. A legitimate seller will give you all the details about the products or services.
- Resist pressure. Legitimate companies and charities will be happy to give you time to make a decision. It is probably a scam if they demand that you act immediately or will not take "no" for an answer.
- If you have to pay first before getting the detailed information about the offer, it is probably a scam.
- Be cautious about unsolicited emails. They are often fraudulent. Do not respond to them, hit the delete key. When you respond to them, their software will allow them to scan your computer for personal information. Be aware of spam and phishing email.
- Think twice before entering contests operated by unfamiliar companies. Fraudulent marketers sometimes use contest entry forms to identify potential victims.
- Beware of imposters. Someone might send you an email pretending to be connected with a business or charity, or create a web site that looks just like that of a well-known company or charitable organization.
- Guard your personal information. Do not provide your credit card or bank account number unless you are actually paying for something. Your social security number should not be necessary unless you are applying for credit. Be suspicious if someone claiming to be from a company with whom you have an account asks for information that the business already has on file.
- Beware of dangerous downloads. While downloading programs to see pictures, hear music, play games, etc., you could download a virus that wipes out your computer files or connects your modem to an international telephone number, resulting in expensive phone charges. Only download from web sites that you know and trust. Remember read all user agreements carefully.
- Pay the safest way. Credit cards are the safest way to pay for online purchases because you can dispute the charges if you never receive the goods or services or the offer was misrepresented. Federal law limits your liability to $50 if someone makes unauthorized charges to your account and most credit card issuers will remove them completely if you report the problem promptly.
- Assign passwords to your accounts. They can offer extra measures of protection from someone else using your account information.

Below are the top 20 scams, schemes and frauds that are currently making the rounds. Remember these are just a few; they are literally hundreds of them.

809 Scam
Prescription Scams

Call Forwarding Scam
Lottery Scams
FDIC “Patriot Act” Scam
PayPal Scam
Foreign Certified Check Scams
Ebay Scam
Nigerian Fee Scam
Fake Check Scams
Nigerian Fraud emails using FBI Letterhead
Mortgage Scams
Bank of America Scam
1-800 Scams
IRS E-Audit Scam
Fake escrow service
Phone or Pager Scam
ATM Scams
Travel/Vacation Scams
Investments
Home Improvement Scams

Here are some important links to remember:

Federal Trade Commission (SPAM) - www.ftc.gov/spam
Federal Trade Commission -www.ftc.gov/chainmail
FBI - www.fbi.gov
First Gov for Consumers -www.consumer.gov
Maryland Attorney General - www.oag.state.md.us
Fair Trader List - www.traderlist.com
Federal Citizen Information Center - www.pueblo.gsa.gov
Consumer Action Group -www.consumeraction.gov
Better Business Bureau – www.bbb.org
National Consumers League – www.fraud.org
Direct Marketing Association - www.dmaconsumers.org
Securities/Exchange Commission – www.nasaa.org
National Charities - www.give.org
Medicare – www.medicare.gov
Anti-Phishing Work Group: www.antiphishing.org

Credit Bureaus:

Equifax - www.equifax.com
Experian - www.experian.com
TransUnion - www.transunion.com

(Compiled by the U.S. Army Research Development and Engineering Command Antiterrorism, Law Enforcement and Physical Security Team)

Solicitation Granted To Provide Relief to South Asia Disaster

The director of the Office of Personnel Management has authorized a special solicitation of federal employees at the workplace to assist in the relief efforts to aid the victims of the Asian earthquake and tsunami disasters.

Based on the recommendations by the U.S. Agency for International Development, cash donations are the most effective way to provide relief assistance to humanitarian organizations, Kay Cole James, the director of the OPM, wrote last week in a memorandum distributed to the heads of all executive departments and agencies.

A cash donation is preferred over items, as it allows volunteers to quickly purchase the items needed, without the task of dealing with transportation routes, staff time, and storage space. It will also allow people to purchase goods that aren't in conflict with the region's culture, diet and environment.

The special solicitation will grant federal employees the opportunity to help in South Asia with a one-time cash or check donation, outside of the normal Combined Federal Campaign procedures. In some areas, the CFC campaign has been extended, thus allowing people to contribute directly to CFC. However, this special solicitation is separate from the actual CFC campaign.

Personnel interested in donating monetary funds, can obtain information on organizations providing disaster relief on the USAID website at www.usaid.gov.

(Submitted by Army Materiel Command Public Affairs Office)